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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/780,071

02/17/2004

David C. Lizon

ADEP.01USUI

9469

27479

7590

12/01/2004

COCHRAN FREUND & YOUNG LLC
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EXAMINER

FRANK, RODNEY T

ART UNIT

PAPER NUMBER

2856

DATE MAILED: 12/01/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/780,071

Applicant(s)

LIZON ET AL

Examiner

Rodney T. Frank

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date ____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims s 1, 6, 7, 8, and 17-20 are rejected under 35 U.S.C. 102(b) as being anticipated by Lichte (U.S. Patent Number 5,303,585). Lichte discloses a volume sensing system includes electronic circuitry, which is electrically connected to an ultrasonic transducer. The transducer is affixed by means of an adaptor to the base of a container having a known configuration. The container holds a liquid and a gas so that a liquid-gas boundary is formed within the container. The transducer generates ultrasonic pulses which propagate through the liquid, are reflected at the liquid-gas boundary, and are received again by the transducer. The received return pulse is converted into an electrical signal which is analyzed by the electronic circuitry to determine the level of the liquid within the container. The level of the liquid within the container is then employed to determine the volume of the liquid within the container in accordance with the configuration of the container. In a preferred embodiment, the adaptor includes an indicator which may be used to identify the configuration of the container (Please see the abstract).

In regard to claim 1, Lichte discloses and shows in figures 1 and 5 an apparatus for measuring liquid level in a container which comprises in combination:

(a) a transducer (11) in physical contact with the outside of a wall of the container (120) located below the surface of the Liquid for generating at least two acoustic resonance responses in the Liquid substantially perpendicular to the surface (160 and 162);

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(b) a sweep generator (410 in figure 5) for electrically exciting said transducer over a chosen range of acoustical frequencies and having a chosen waveform, and

(c) a receiver for measuring the acoustic frequencies for at least two resonant responses.

In regard to claim 6, Lichte discloses and shows in figures 1 and 5 an apparatus for measuring Liquid level in a container which comprises in combination:

(a) means (11) in physical contact with the outside of a wall of the container (120) located below the surface of the Liquid for generating at least two acoustic resonance responses in the Liquid substantially perpendicular to the surface (160 and 162);

(b) means for electrically exciting said means for generating at least two acoustic resonance responses over a chosen range of acoustical frequencies and having a chosen waveform (410).

In regard to claim 7, the means for generating the two at least acoustic responses and for determining said acoustic frequencies of said responses comprises an acoustic transducer and acoustic receiver.

In regard to claim 8, a sweep generator is disclosed (410).

In regard to claims 17, 18, and 19, these claims are more broad recitations of the apparatus claims above, and the examiner feels that since the specific, more narrow claims are disclosed, and then the broad, general apparatus is disclosed as well.

In reference to claim 20, Lichte discloses a method for measuring Liquid level in a container which comprises the steps of:

(a) generating at least two acoustic resonances in the Liquid substantially parallel to the surface of the Liquid, and

(b) detecting the presence of acoustic resonances from the Liquid.

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This is generally disclosed in column 11 line 28 through column 12 line 64.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 2-5 and 9-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lichte.

5. In regard to claims 2 and 9, though the sweep generator is disclosed to generate a square wave, the changing of the oscillator from a square to a sine wave would not given any disclosed advantage nor any unexpected result in view of the prior art and is therefore seen as a mere design choice well within the preview of one of ordinary skill in the art.

In regard to claim 3-5 and 10-12, though these exact parameters of the calculation are not specifically disclosed, the examiner takes the position that the use of, for example, a Fast Fourier Transform, which is a time domain measurement, a specific resonance, or the sine function given, is just one of many time domain techniques that may be used by one of ordinary skill in the art to determine a travel time and/ or interpret data from a level system, and would therefore be an obvious design choice for the circuitry for the device to operate depending on the specific desire of the user.

In reference to method claims 13-16, though the method is not explicitly spelled out, since the apparatus parameters appear to be disclosed, then the method to operate such a device would also be obvious to one of ordinary skill in the art in view of the prior art.

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Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Rodney T. Frank whose telephone number is (571) 272-2193. The examiner can normally be reached on M-F 9am -5:30p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hezron E. Williams can be reached on (571) 272-2208. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

RTF
November 29, 2004


HEZRON WILLIAMS
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2800